



Local Index of Child Well-Being

Summary Report



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January 2009
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Online via the Communities and Local Government website: www.communities.gov.uk

January 2009

Product Code: 08 NRAD 05664

ISBN: 978-1-4098-0904-3

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Preface

During the public consultation on the proposals to update the Indices of Deprivation 2000 (ID 2000), there were a number of calls for the Government to consider producing separate Indices for different groups of the population. In response to these calls, Communities and Local Government commissioned the Social Policy Research Unit (SPRU) and the Social Disadvantage Research Centre (SDRC) at the University of Oxford to create an Index of Child Well-being (CWI), using the methodology and approach applied to the Indices of Deprivation.

The CWI represents the first attempt to create a small area index exclusively for children in England. Unlike the Index of Multiple Deprivation (IMD), the CWI was restricted by the availability of data as many datasets are not disaggregated by age group. Data on children is largely collected through surveys which are not robust enough to be broken down to small area level.

As this is the first attempt to produce such a specialised Index at small area level for the country, we would welcome any comments you may have on its construction and the ways in which you think the Index might be useful. However, this is not a formal consultation and we make no commitment to publish responses that you may offer.

Please forward any comments to: indices.deprivation@communities.gsi.gov.uk.

Introduction

The Child Well-being Index (CWI) is produced at Lower Super Output Area level (LSOAs) and is made up of seven domains. Summary measures of the CWI are presented at local authority district and county council levels.

The CWI is based on the approach, structure and methodology that were used in the construction of the ID 2007. The seven domains included in the CWI are:

- Material well-being
- Health
- Education
- Crime
- Housing
- Environment
- Children in need.

This summary report outlines the components of the CWI and explains the difficulties introduced as a result of data availability.

The Concept of Child Well-Being

This is an index of child well-being rather than an index of deprivation, mainly because it contains variables that are not strictly related to deprivation.

Child well-being is generally represented by how children are doing in a number of different domains of their life. At national and international level these domains have included those covered in the CWI. There are no comprehensive national sources of data on other domains of well-being that could have been included – subjective well-being, relations with family and friends, civic participation, behaviour and risks for children (except for data on accidents). Such data can only be derived from surveys, which are not large enough to generate results reliable at local authority level¹ and below. There are also no national, comprehensive data on child abuse and neglect, or other groups of children in special circumstances (travellers' children, asylum seekers' and refugees' children and children of new migrants). The small numbers of these children make it difficult to undertake statistically robust analysis at small area level.

Nevertheless this index covers the major domains of a child's life that have an impact on child well-being and that are available for LSOAs in England.

Age range

When using administrative data (or standard tables from the Census) it is necessary to be quite pragmatic about the age range of children. Where there was a choice the standard child benefit definition 0-16 or 18 if in full-time education was used. However this was not possible or appropriate in all cases. However, in all cases the age range of the denominator was matched to that of the numerator.

Domains and Indicators

Each of the seven domains contains a number of component indicators. The criteria aspired to for including these indicators was that they should be

- Related to the domain
- Measure a major feature of well-being
- Be up-to-date
- Be capable of being updated on a regular basis
- Be statistically robust; and
- Be available for the whole of England at a small area level in a consistent form.

¹ The Ofsted Tellus2 survey may be in the future.

Data time point, spatial scale and denominators

Where possible the indicators relate to 2005 and are presented at LSOA level with summaries at district and county levels. The denominators at LSOA level for 2005 were provided by the Office for National Statistics' Small Area Population Estimation Unit. For the indicators where numerators were derived from the 2001 Census, the denominators were also drawn from the Census.

The Domains

Material well-being

The purpose of this domain is to capture the proportion of children experiencing income deprivation in a small area. This domain has antecedents within the Indices of Deprivation for England. In those Indices a separate 'Income Deprivation Affecting Children Index' (IDACI) was published alongside the IMD 2007. The IDACI comprised the percentage of children under 16 living in families reliant on various means tested benefits. The material well-being domain for CWI is the same as the IDACI 2007.

The Indicators

- *Children aged 0-15 in households claiming Income Support (Source: DWP, 2005)*
- *Children aged 0-15 in households claiming Income-Based Job Seekers' Allowance (Source: DWP, 2005)*
- *Children aged 0-15 in households claiming Pension Credit (Guarantee) (Source: DWP, 2005)*
- *Children aged 0-15 in households claiming Working Tax or Child Tax Credit whose equivalised household income (excluding housing benefits) is below 60 per cent of the median before housing costs (Source: HMRC, 2005)*
- *Children aged 0-15 in households claiming Child Tax Credit (who are not eligible for Income Support, Income-Based Job Seeker's Allowance, Pension Credit or Working Tax Credit) whose equivalised income (excluding housing benefits) is below 60 per cent of the median before housing costs (Source: HMRC, 2005).*

The material well-being index is a comprehensive, non-overlapping count of children living in households in receipt of both in-work and out-of-work means-tested benefits.

The numerator is a simple sum of children aged 0-15 living in low-income households while the denominator is total number of children aged 0-15. Thus, the domain score for each LSOA in the CWI is the proportion of its 0-15 year old children who are living in low-income households. The indicators are summed and expressed as a rate of the total child population aged 0-15.

Health

Health is a clear contributor to the overall well-being of children. Ideally this should be a positive measure of health status. However because of shortages of data of this type at local level, this domain focuses on illness, accidents and disability, as represented by the use of health services and the uptake of disability benefits.

The Indicators:

- *All emergency admissions to hospital for children aged 0-18 as a proportion of all children aged 0-18 in each LSOA.* (Source: Hospital Episode Statistics for England, 2005/6)
- *All outpatient hospital attendances for children aged 0-18 as a proportion of all children aged 0-18 in each LSOA.* (Source: Hospital Episode Statistics for England, 2005/6)
- The proportion of children aged 0-16 receiving Disabled Living Allowance. (Source: DWP, 2005).

The emergency admissions indicator reflects the incidence of acute illness and accidents in children and young people, and includes not only the proportion of children who were admitted to hospital but the frequency of admissions within the year as a proxy for severity of illness.

The outpatient hospital attendances indicator reflects the prevalence of chronic illness in children and young people, and again includes not only the proportion of children who attend hospital clinics but the frequency of attendances within the year as a proxy for severity of illness.

The disability allowance measure reflects the prevalence of disability.

The three indicators were combined with equal weights to create the final Health Domain score.

Education

The Education Domain includes a variety of education outcomes including attainment, school attendance and destinations at age 16.

The Indicators:

- *Two year rolling average points score at Key Stage 2 derived from test score.* Source: PLASC (2004-2005), NPD (2004-2005)
- *Two year rolling average points score at Key Stage 3 derived from test score.* Source: PLASC (2004-2005), NPD (2004-2005)
- *Two year rolling average capped (best of 8 GCSE and/or equivalent vocational qualifications) points score at Key Stage 4.* Source: PLASC (2004-2005), NPD (2004-2005)
- *Secondary school absence rate* – based on two year average of school level absence rates allocated to local area using PLASC. Source: PLASC and DfES absence rate data (2004-2005)
- *Proportion of children not staying on in school or non-advanced further education or training beyond the age of 16, average of 2004 and 2005.* Source: Child Benefit (2002-2005)
- *Proportion of those aged under-21 not entering higher education (4 year average, 2002-2005).* Source: Universities and Colleges Admission Service (UCAS), Higher Education Statistics Agency (HESA).

The indicators in the Education Domain correlate well with one another so maximum likelihood factor analysis was used to generate weights for combining the indicators.

Crime

The Crime Domain represents a measure of personal or material victimisation. Due to lack of available data on the impact of crime on children, the Crime Domain uses overall police recorded crime data relating to four major volume crime types that have major effects on individuals and communities. In order to provide a child focus to the domain, each of the four component indicators has been weighted according to the proportion of the 'at-risk' population that is aged 0-15.

The Indicators:

- *Burglary rate* (four recorded crime offence types, police force data for April 2004-March 2005, constrained to Crime and Disorder Reduction Partnership (CDRP) level)
- *Theft rate* (five recorded crime offence types, police force data for April 2004-March 2005, constrained to CDRP level)
- *Criminal damage rate* (ten recorded crime offence types, police force data for April 2004-March 2005, constrained to CDRP level)
- *Violence rate* (14 recorded crime offence types, police force data for April 2004-March 2005, constrained to CDRP level).

The four indicators were standardised and combined using the weights generated by maximum likelihood factor analysis to form the Crime Domain score.

Housing

Children spend a great deal of their lives at home. Therefore the house that they live in can have a profound impact on their well-being.

The only source of housing data at LSOA level is the 2001 Census. Four indicators have been selected to represent the housing circumstances of children and, as a result of preliminary analysis, they are represented in two sub-domains.

The Indicators:

Access to housing:

- *Overcrowding: occupancy rating.* Source: Census table CAS053.
- *Shared accommodation: people living in shared dwellings, aged 0 to 15 as a proportion of all children 0-15 in each LSOA.* Source: Census table CAS054
- *Homelessness: concealed families containing dependent children as a proportion of all families with dependent children.* Source: Census table CAS011

For the overcrowding indicator, the counts of households comprising couples, lone parents, and other types of household containing dependent children living in accommodation with at least one room too few is summed across the tenures and expressed as a proportion of all households to give a rate of 'overcrowded' households containing dependent children.

Quality of housing

- *Lack of central heating:* children aged 0 to 15 years old living in accommodation without central heating as a proportion of all children aged 0 to 15. Source: Census table CAS054

After exponential transformation these two sub-domains were combined into a single housing domain using equal weights.

Environment

The Environment Domain captures aspects of the environment that affect children's physical well-being (health, exercise and safe, independent mobility). Indicators of the potential of the natural environment to provide children with play spaces that enhance their personal, cognitive and social development are incorporated. As a result of preliminary analysis the indicators were divided into two sub-domains.

The Indicators:

Environmental quality

- Air quality: *combined air quality indicator*. Source: Geography Department at Staffordshire University
- The natural environment: *percentage of green space and woodland*
- *The number of bird species*. Source: European Environment Agency's CORINE Land Cover (CLC) database; British Trust for Ornithology bird breeding atlas
- Road safety: *severity-weighted accidents per 1000 children aged under-16*. Source: Department for Transport.

Environmental access

- Availability of opportunities for sports and leisure: *average number of different types of sports and leisure facility within walking distance for children aged 11 to 16*. Source: Ordnance Survey Points of Interest
- Distance to school: *average road distances to primary and secondary schools for children aged 4 to 10 years and 11 to 16 years*. Source: PLASC (2005) and Edubase (2005).

The four indicators in the environmental quality sub-domain were ranked and normalised and combined using equal weights. The three indicators in the environmental access sub-domain were also ranked and normalised and then combined with the distance to schools indicators comprising 25 per cent of the sub-domain score each and the access to services indicator comprising the remaining 50 per cent. The two sub-domains were exponentially transformed and combined using equal weights.

Children (at risk of being) in need

This domain is about children who are in various kinds of need. The Children in Need Survey (2005) (CiN), from the Department for Children, Schools and Families, provides information on all the children served by local authorities in a given week.

Just under one in six (17.5%) of the children lacked an LSOA code. Children without this information came overwhelmingly from a small number of local authorities. It was therefore decided to model this indicator on the basis of information available for the authorities where data was available. The domain reflects the expected rate of children in need in a given LSOA given other information about it. Through the use of regression analysis it was found that 32 per cent of the variation of children in need under 19, as a proportion of all children under 19, was explained by Income Deprivation Affecting Children (the Income Domain of the CWI), the Income and Employment Domains of the ID2007 and Education Domain of the CWI. This model was used to predict the proportion of children in need in all areas.

Analysis

Unlike the Index of Multiple Deprivation the domains in the CWI are combined using equal weights as there was no justifiable reason to weight some domains more heavily than others.

Outputs

1. Each of the 32,482 LSOAs in England has been assigned a score and rank for the CWI index; the seven domain indices; and the two sub domains.
2. Each local authority district is assigned a score and a rank using a population weighted average of the score and rank for each LSOA within the local authority.
3. Each (social service authority) is assigned a score and rank based on the population weighted score and rank for each LSOA within the social service authority.

A glimpse at the results

Table 1: A correlation matrix between the domains and overall well-being (all coefficients are statistically significant at the <0.01 level)

	Material	Education	Health	Environment	Crime	Housing	Children in need	Overall
Material	1.00	0.80	0.56	0.07	0.55	0.63	0.96	0.90
Education		1.00	0.57	0.03	0.53	0.48	0.86	0.83
Health			1.00	0.05	0.36	0.31	0.59	0.68
Environment				1.00	-0.02	0.16	0.07	0.30
Crime					1.00	0.35	0.54	0.63
Housing						1.00	0.59	0.69
Children in need							1.00	0.91
Overall well-being								1.00

Table 2: 20 Local authority districts with the lowest and highest average score on child well-being

Lowest well-being		Highest well-being	
354	Manchester	1	Hart
353	Tower Hamlets	2	Ribble Valley
352	Liverpool	3	Mid Sussex
351	Islington	4	East Hertfordshire
350	Hackney	5	Rutland
349	Kingston upon Hull, City of	6	Waverley
348	Southwark	7	Wokingham
347	Birmingham	8	South Northamptonshire
346	Nottingham	9	Surrey Heath
345	Middlesbrough	10	Horsham
344	Lambeth	11	Chiltern
343	Leicester	12	Elmbridge
342	Newcastle upon Tyne	13	Mid Bedfordshire
341	Haringey	14	South Cambridgeshire
340	Sandwell	15	West Oxfordshire
339	Knowsley	16	St Albans
338	Barking and Dagenham	17	Fareham
337	Lewisham	18	Congleton
336	Newham	19	Rushcliffe
335	Bradford	20	Uttlesford

The regional picture

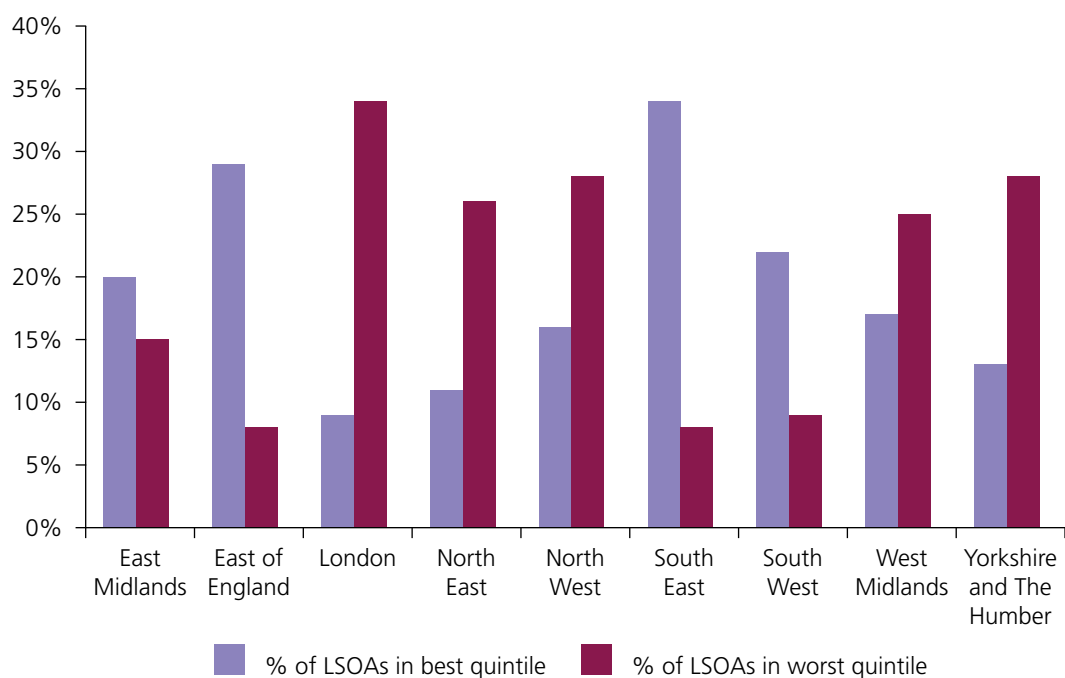
The South East region has the greatest proportion (34%) of its LSOAs amongst the 20 per cent in England with the highest child well-being. The region with the lowest proportion is London (9%).

	Number of LSOAs in the best 20% of LSOAs in England	Number of LSOAs in the region	% of LSOAs in best quintile
East Midlands	553	2,732	20%
East of England	1,047	3,550	29%
London	426	4,765	9%
North East	178	1,656	11%
North West	731	4,459	16%
South East	1,825	5,319	34%
South West	701	3,226	22%
West Midlands	592	3,482	17%
Yorkshire and The Humber	443	3,293	13%
Total	6,496	32,482	20%

Conversely, London has the highest proportion of its LSOAs (34%) within the 20 per cent in England with the lowest child well-being. The regions with the lowest proportion are the South East and the East of England (both 8%).

	Number of LSOAs in the worst 20% of LSOAs in England	Number of LSOAs in the region	% of LSOAs in worst quintile
East Midlands	413	2,732	15%
East of England	288	3,550	8%
London	1,598	4,765	34%
North East	429	1,656	26%
North West	1,240	4,459	28%
South East	438	5,319	8%
South West	293	3,226	9%
West Midlands	885	3,482	25%
Yorkshire and The Humber	912	3,293	28%
Total	6,496	32,482	20%

Figure 1: The distribution of LSOAs within the best and worst quintiles by region on the CWI.



ISBN: 978-1-4098-0904-3

ISBN 978-1-4098-0904-3



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